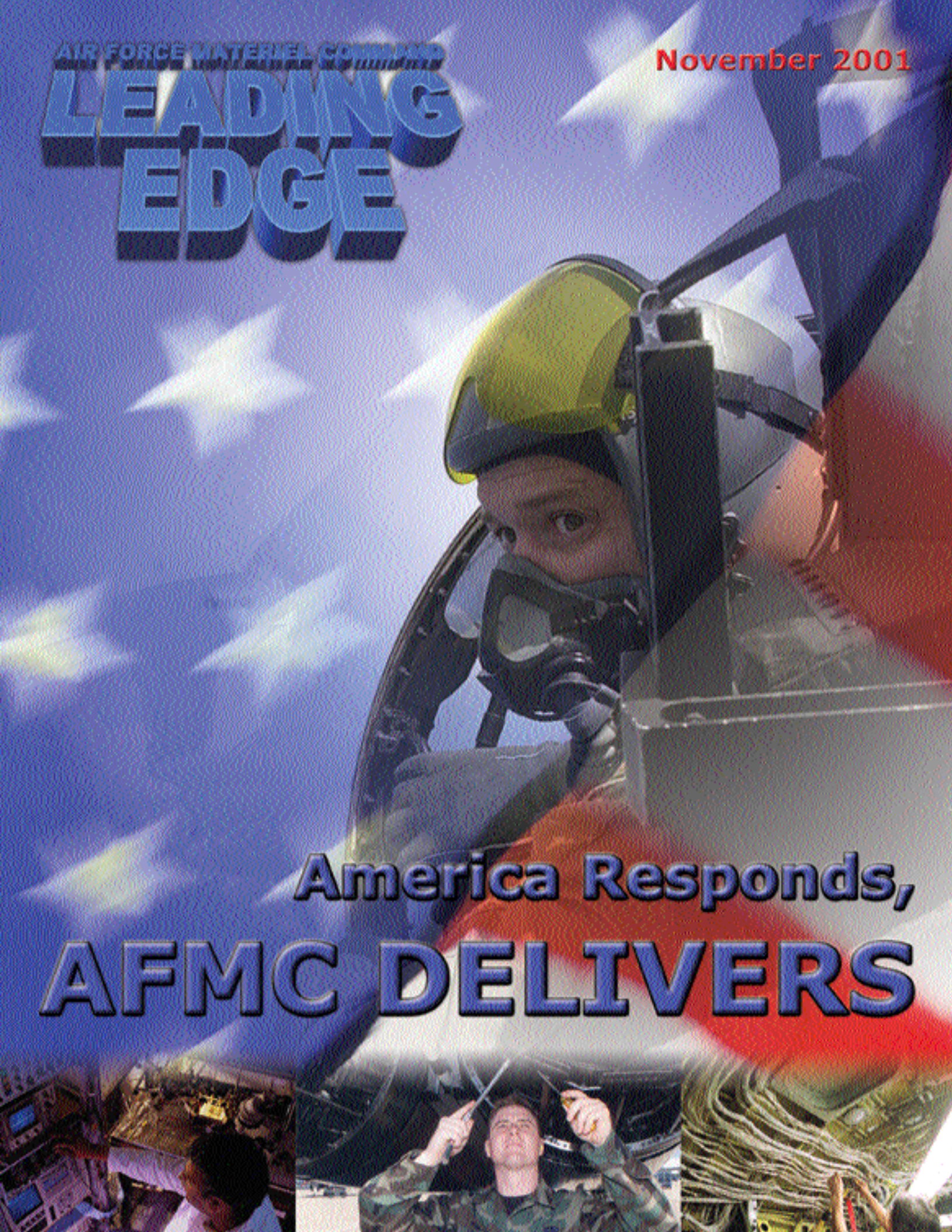
AIR FORCE MATERIEL COMMAND

LEADING EDGE

November 2001



America Responds,

AFMC DELIVERS

VOLUME 43 NUMBER 11 November 2001

LEADING EDGE

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AFMC
AIR FORCE MATERIEL COMMAND

Cover Stories

Cover design by SSgt John Carty, AFMC/CVP

AFMC warriors, military and civilian, are surging forward to confront a new challenge as America responds to the war on terrorism. AFMC people help deliver advanced weapon systems and technologies to support the warfighter as well as provide humanitarian support to the victims of the Sept. 11 terrorist attacks.

Mission Progress

Features

Departments

Courtesy photograph

Wing welcomes F-22

EGLIN AIR FORCE BASE, Fla. — The 53rd Wing welcomed the F-22 Raptor as operational testing begins on the Air Force's newest fighter.

The wing's 422nd Test and Evaluation Squadron at Nellis AFB, Nev., is the first Air Combat Command unit to receive the F-22. Test pilots at Edwards AFB, Calif., are also now testing the aircraft.

It will assume its air superiority role within ACC starting in 2005. The Air Force plans to procure 339 F-22s.

— Information provided by AAC Public Affairs

AFRL completes Oracle beta test program

ROME, N.Y. — Air Force Research Laboratory engineers have successfully completed participation in a six-month test program for the next-generation database and internet server being developed by Oracle Corp.

Evaluation of technology focusing on network security was the primary goal of participation in Oracle's beta test program.

Under the auspices of its joint battlespace infosphere program, AFRL's Information Directorate focused its efforts on ensuring the latest major release of Oracle software adheres to stringent Air Force and Defense Department guidelines for security of data generated and stored in mission-critical command and control information systems.

Security issues remain a high priority as Air Force control information legacy systems undergo re-engineering and a move towards using open commercial-product-based architectures and standards that are based on the internet and World Wide Web. The Defense Department has adopted Internet-like technology to support command and control of worldwide military and humanitarian operations.

The directorate has numerous technology programs addressing information management issues, but this is a lead effort.

The program is a combat information management system that provides individual users with the specific information required for their functional responsibilities during crisis or conflict.

— Information provided by AFRL Public Affairs

First free scramjet flight accomplished at AEDC

ARNOLD AIR FORCE BASE, Tenn. — It took about 30 milliseconds for a supersonic combustion ramjet engine, known as a scramjet, to make testing history recently by powering a projectile in free flight for the first time.

Arnold Engineering Development Center test teams integrated a scramjet engine into a 20 percent scale model of a conceptual missile and fired it from the center's light gas gun to make history.

The gun provided the initial boost required since scramjet engines don't kick in until reaching hypersonic speeds. After the titanium projectile was launched, it used its scramjet engine to cover 260 feet in slightly more than 30 milliseconds, or about the time it takes a person to blink.

The test demonstrated the ability of the scramjet's engines to provide enough thrust to power free-flying vehicles, while reducing test customer costs from millions to thousands of dollars.

Applications for such engines include long-range hypersonic missiles, gun-launched kinetic energy weapons and access to space vehicles.

The Defense Advanced Research Projects Agency, or DARPA, program showed the gun launch as a low-cost alternative for scramjet testing. Program officials anticipate the new AEDC capability can significantly reduce costs and accelerate scramjet technology development.

Additional launches at AEDC are planned, with higher-performance scramjet engines and longer flight durations. The tests are being done under a Phase II Small Business Innovation Research contract with DARPA.

— Information provided by AEDC Public Affairs

B-1 gets stronger, safer horizontal substructure

TINKER AIR FORCE BASE, Okla. — Tinker maintainers will be beefing up the B-1B fleet's horizontal stabilizers during the next six years, gutting and replacing its horizontal substructure to make it safer and sturdier.

Routine inspections in the early 1990s, ten years into the life of the aircraft, revealed cracks in the substructure. Interim repairs were made until permanent repairs could be done on the entire 93-aircraft fleet. Project costs are estimated at hundreds of millions of dollars.

The first of two prototypes, which entered programmed depot maintenance in November of last year, were returned to the fleet in August. Full production begins in the next two months as the shop grows from 25 to about 75 employees.

Horizontal stabilizers provide the bomber's pitch and roll. They are made of aluminum skins with titanium spars running lengthwise and aluminum ribs criss-crossing the spars.

During the repair, workers remove the upper skin, which has about 3,500 fasteners, take out the old spars and ribs and replace them with new, sturdier parts.

— Information provided by OC-ALC Public Affairs

Contract awarded for Rome research facility

ROME, N.Y. — The centerpiece of a $24.8 million partnership between the Air Force and New York State is taking form.

Atkins Benham Constructors of Oklahoma City, Okla., was awarded a $19.6 million contract to build a new research facility for Air Force Research Laboratory Information Directorate at the Griffiss Business & Technology Park.

The congressionally-approved 105,000-square-foot facility is the result of joint funding and support by the Air Force military construction program and the state's Empire State Development Corp. The consolidation creates a complex housing the information directorate's technical divisions in efforts to enhance research collaboration among the directorate staff. Construction is expected to be completed by July 2003.

— Information provided by AFRL Public Affairs

DELIVERING CAPABILITIES

AFMC moves to wartime footing

— Gen. Lester Lyles
AFMC Commander

In Hog Heaven, Shauna Sullins is reluctant to leave work when it is time. An A-10 electrician who works at Hill AFB, Utah, in the Aircraft Directorate, Ms. Sullins is a member of the team that's extending the life of the A-10 Thunderbolt II, the Air Force's close air-support aircraft. The Hog, as it's affectionately known, is one of the many systems AFMC supports that could be called upon during the war on terrorism.

AFMC warriors

Senior Airman Darnell Saunders, a security forces journeyman at Wright-Patterson AFB, Ohio, has been called upon to support our nation's war on terrorism, along with hundreds of his security forces counterparts around the country. He knows sacrifice, living it every day on the frontline of our homeland defense by working extended hours, enduring harsh elements and facing unknown threats to ensure you and I are safe during this time of heightened force protection measures.

At Eglin AFB, Fla., Mr. Bill Yourick takes pride in managing a team that designs, develops and tests containers for Air Force munitions and high-value items. It's a high demand activity right now!

A joint air-to-surface standoff missle, or JASSM, in a test flight above the New Mexico desert. The weapon, designed jointly between Eglin and Lockheed, is considered to represent the next generation of long-range cruise missiles. The jet accompanying the missle ia a F-16. AFMC plays a vital role in providing munitions like these to warfighters.

Mr. George Falldine is just as motivated, but he has an additional incentive for doing his job well. The senior man in the Plans and Programs Directorate at Warner-Robins Air Logistics Center, Robins AFB, Ga., Mr. Falldine was attending a hurriedly called meeting in the Pentagon on the morning of Sept. 11.

At about 9:30 a.m., Mr. Falldine felt the explosion. We all know what happened next in the grim hours and days following the terrorist attacks.

A narrowed focus

Now the Air Force is engaged in military operations over Afghanistan and all of the nation's armed services have been called to action in the broad battle against terrorism. There is much to be done — throughout the nation, the Air Force and AFMC.

Our air logistics centers are postured for speed and efficiency beyond what is normal for peacetime operations. This ability to surge in rebuilding and repairing engines, performing maintenance on aircraft or modernizing aircraft capabilities is crucial to accomplishing the Air Force mission.

We have a rapid acquisition team that specializes in procuring quickly what warfighters tell us they need in the field now, but we are all moving more rapidly than we did prior to Sept. 11.

I have asked the Air Force Research Laboratory and product centers to focus on identifying technologies that AFMC can quickly develop into prototypes or programs we can accelerate. Our goal is to increase the effectiveness of our combat operations.

While I've mentioned only three examples, all of our mission areas have transitioned to a wartime footing. No matter where you work — Program Support, Science and Technology, Information Services, Depot Maintenance, Supply Management, Test and Evaluation, Information Management or Installations and Support — then you are part of our warfighter support team.

The Air Force and our nation count on AFMC, and we must respond even if many of those who benefit from our work don't know the source of their support.

Ours is an extraordinarily complex and diverse mission. While the objective of our efforts is clear — world-class support for America's warfighters — the breadth of our responsibilities makes it difficult to explain how much capability we provide.

The best explanation I can think of was prompted by a quote from the Electronic Systems Center vice commander, Brig. Gen. Robert Latiff, published in the *Hansconian*, the base newspaper for Hanscom AFB, Mass. He said, "Operational forces ask us to solve problems and deliver new capabilities."

That's it. We are the problem solvers. We're the part of the Air Force that comes up with "better, faster, cheaper" ways to make the warfighter more effective. "We are warriors supporting warriors," as Lt. Gen. Dick Reynolds, commander of Aeronautical Systems Center, recently said.

Solutions for warfighters

This issue of *Leading Edge* is devoted to showing a few of our problem solvers at work. It highlights just some of the many solutions AFMC people have contributed to our country's resolute stand against terrorism.

It isn't possible, of course, to show everyone and everything about AFMC's contribution to the Air Force mission and our nation's war on terrorism. Much of what we're accomplishing at this time cannot even be discussed; however, in the following pages, all of us can catch a glimpse of how the Air Force and this command respond when called.

Like Ms. Shauna Sullins, Airman Saunders, Mr. Bill Yourick, and Mr. George Falldine, we each have an important part to play. Know their patriotism, dedication and professionalism are representative of everyone on the AFMC team. On behalf of the Air Force leadership, I thank you all for your extraordinary efforts!

AFMC shaping, leading change to maintain dominant combat edge

WARRIORS SUPPORTING WARRIORS

Bringing tomorrow's technologies to today's warfighter is how Air Force Materiel Command officials are helping fight America's war on terrorism.

Focusing on the command's rapid response capabilities, AFMC experts recently began cataloging what weapons capabilities and other technologies exist at its various labs and centers, what stages of development they're in and how soon they could be given to the warfighter. This information will be available so battle staff members across the Air Force can see what capabilities are available now and what can be accelerated through the acquisition process and made available in the near term to protect our homeland and fight America's war on terrorism.

A new strategy

In a letter to all AFMC employees, Gen. Lester Lyles, AFMC commander, said the administration is setting new priorities and a new strategy for the nation's defense. The recent terrorist attacks on America dramatically and tragically emphasized the need for these changes, he said.

"We in AFMC need to help shape and lead that change by acquiring and sustaining the new capabilities the Air Force will need in the future to maintain its dominant combat edge," Gen. Lyles said. "If we're to continue providing world-class materiel support to our customers, we must clearly understand their changing requirements and periodically review how we do business. We must ensure our strategies, plans, policies, processes and organization are in tune with our customers' changing needs."

AFMC leaders have long been looking at various projects, like improving developmental planning and item turnaround times along with shortening the acquisition process to make it more agile and faster. These initiatives and others like them allow the command to more rapidly and effectively support the warfighters and emergency agencies, according to Col. Thomas Di Nino, AFMC Acquisition Support Division chief.

"What happened Sept. 11 caused us to take a more focused look at what we in AFMC do and also provided us a very good reason why our role in the Air Force is critical," he said.

During the Persian Gulf War, AFMC officials took the E-8 Joint STARS aircraft out of its test phase and made it available for battle. This paid great dividends in our immediate combat capability, according to Col. Di Nino.

"If we don't provide tools that our warfighters can use when they need it, we're not playing as part of the team in helping this country," Col. Di Nino said. "Rapid response is another way our command can help in our nation's defense."

AFMC's rapid response system works either of two ways, according to Col. Di Nino. First, it allows warfighters or emergency crews to "pull" a capability from AFMC; they ask for an item that may help them. "There has always been a process where the warfighter could issue a combat mission need statement during a combat situation. In the past, they may have asked for a capability that might not have been readily available. Now that the warfighter can see what capabilities are available and what can be accelerated, there's a greater chance they can find a capability they can use right now."

Second, AFMC experts may be aware of a capability or technology that could help in a given emergency situation and "push" that to the people needing it. "If they're interested, we would provide them additional information, and if they want the system we could rapidly arrange for acquisition and deployment," Col. Di Nino said.

Rapid response successes

Col. Di Nino cited as recent rapid response "push" successes a couple of technologies deployed to the World Trade Center to support rescue and recovery efforts.

The remote casualty location assessment device is a radar-like device about the size of a flashlight that can detect people through concrete and soil to a thickness of approximately 50

See **Warfighter** *Page 6*

AFMC support to the warfighter takes many forms. Above, Mr. Jason Henrie (left) and Mr. Jeff Richardson, production mechanics in Hill's landing gear wheel unit, assemble C-5 main landing gear wheels. The landing gear directorate repairs 70 percent of Defense Department aircraft landing gear. (Photo by Tech Sgt. Lance Cheung)

Warfighter *from page 5*

feet. Another device Electronic Systems Center experts developed was also used at the World Trade Center. "This device detects cell phone signals. If it detects a signal there are probably people in that area," Col. Di Nino said. "Regardless of these two examples, we believe there are other possible events that could occur where we might provide support with available capabilities. But unless we make those capabilities known to a warfighter or agency that might use them, they'll not be much help."

Col. Di Nino said although this rapid response is a great benefit during combat operations or responding to contingencies, accelerating programs is not something that should be rushed into. He said an acquisition plan needs to be completely executed before fielding a new weapon system. Staying with that plan will give the warfighter a completely tested product that meets all their requirements.

He also said when AFMC accelerates items, it uses resources that might not normally be there so money, manpower or materiel might be diverted from somewhere else. "In our current situation, where we have tight resources, we need to be careful how we impact programs," he said. "We can't accelerate everything. We still want to deliver systems that satisfy all of the requirements the MAJCOMs planned and programmed for."

However, all that can change during an emergency situation. "We'll take an item out of test or field a prototype if we feel sufficient capability is there," Col. Di Nino said. "Even if the product falls short of the requirements we programmed for, that system may have capabilities that are directly important to the emergency and that's why we take the risk of impacting the normal process."

Though pulling the Joint STARS out of testing in the 1990s to help oust Iraqi forces from Kuwait was an "abnormality" at the time, Col. Di Nino said AFMC is now prepared to pull items out of test or field prototypes to help in the nation's war on terrorism.

"We're ready to impact cost and schedules of programs because we're aware those additional costs pale in comparison to the threat to the United States," he said. "Rapid response immediately benefits the warfighter or agency directly responsible for the emergency or conflict; but the real beneficiaries are everyone in the United States because this gets the warfighter the capabilities they need sooner."

— Tech. Sgt. Carl Norman, AFMC Public Affairs

AFMC "leaning forward," giving warfighters support

As most Americans sat glued to their television sets, watching in horror as terrorists attacked the country Sept. 11, government leaders were planning a course of action.

Battle staff members across the country plotted protective courses and Air Force Materiel Command officials began working to make sure America's warfighters have the necessary equipment when needed.

Responding in wartime

In contingency and wartime situations, AFMC depots increase their maintenance capabilities over their peacetime rate based on a specific tasking. They do this by working overtime, increasing the number of shifts, deferring low-priority items or emphasizing high-priority items.

Such was the case at Robins Air Force Base, Ga. Maj. Gen. Dennis Haines, Warner Robins Air Logistics Center commander, said the task at hand is to carry on with the mission.

"We're leaning forward to make sure we provide the spare parts and equipment needed," he said. "We're making sure that our units, if called, are at the highest state of readiness."

He said all the center's production teams have gone to two 10-hour shifts, and in some cases 12-hour shifts, to expand their ability to produce parts and aircraft.

Doing whatever it takes

Mr. Al Fatkin, C-5 System Program Office deputy director, said, "We're all leaning forward in our planning for aircraft acceleration, compression and exchangeable surge. Our folks are anxious, and will do whatever it takes to provide support to our customer."

Col. C.R. Davis, F-15 System Program Office director, agreed.

"Team Eagle was literally tearing at its leash to support our F-15 fleet," he said. "As you may know, F-15s were defending the skies above the East Coast. It makes you proud to see our jets doing what they do best, but incredibly sad about where they had to do it."

Within 24 hours, Col. Davis said, the team had run several scenarios related to parts surge and aircraft acceleration.

Workers enthusiastic

"Our production team begged to go to 24-hour shifts, and we let them," he said. I couldn't have asked for better support from a single person in the F-15 SPO — in fact, I generally had to reign in their zeal while we waited for command-level tasking."

Just as the Robins workers were plotting their course and marching ahead, so were workers at the Oklahoma City Air Logistics Center at Tinker AFB, Okla.

When several Tinker units received the call to help fight the war on terrorism, the base's textile and life support unit supplied parachutes, life rafts, emergency escape slides, life preservers, survival kits, fuel cells, wing seals and local-manufactured items like tool bags, equipment covers and engine covers.

Operations surge to meet needs

During their recent surge, shop workers boosted their operations to support the military need, according to Mr. Russell Ennis, Tinker's textile and life support unit chief.

"What makes a surge different is your workload usually doubles and the supplies have to be produced in less time than normal," he said.

"The purpose of a surge is to meet the needs of the military, no matter what has to be done. This takes priority over all the other work you're doing in order for the troops to deploy when they are needed."

In the most recent case, Mr. Ennis said his unit worked 11 hours a day, six days a week. He said the unit even added a second shift to meet the extra demand for parts and services.

— Compiled from Tinker and Robins AFB reports

Hill workers ready on the home front

Civilians repair, upgrade and modify A-10s

Ms. Shauna Sullins regrets she will not be able to take up arms and join those who will be on the front-lines of the war on terrorism.

But the electrician in the A-10 production section of the aircraft directorate is ready to do her part on the home front. She is one of thousands of civilian workers at the Ogden Air Logistics Center, a key aircraft maintenance depot at Hill Air Force Base, Utah.

Ms. Sullins is part of a team that extends the life of an Air Force workhorse, the A-10 Thunderbolt II. The center's civilian work force repairs, upgrades and modifies many Air Force aircraft or parts. Some of the planes are no longer in production, and some are more than 40 years old.

Aging aircraft given new lease on life

Still, the aircraft could play a key role as the United States gears up for military action against countries that harbor terrorists. That makes her job, and Hill's, much more vital, Ms. Sullins said. "It will put Hill right in the middle of the fight."

The hangar where she works, dubbed "Hog Heaven" after the nickname given the tank-busting jet, is full of the aircraft in various stages of repair. Some are getting new wings, others a new, combined internal navigation system-global positioning system, while others await new paint jobs. But no matter what work they are doing, Ms. Sullins said there is a new sense of urgency among her co-workers. They want to get the A-10s back to their units quickly. "And everyone wants to do the best job they can," she said.

The same spirit permeates the base. There are signs everywhere that the base's work force is rallying behind President Bush in the aftermath of the Sept. 11 terrorist attacks on the nation. American flags flutter from car antennas. Hats and T-shirts with American flags are commonplace, and "God Bless America" is on billboards.

A sense of purpose

Civilians and military alike, better appreciate the value of their work, and the seriousness and impact of what they do, said Ms. Lynn Yates, deputy director of the mature and proven aircraft directorate. The unit provides A-10 program management and logistics for the aircraft directorate. "I think people are going about their business as usual," Ms. Yates said. "But I also think they have a stronger focus, a new sense of purpose."

At Hog Heaven, Mr. Steven Burger said that sense of importance is strong. The A-10 work leader and jet engine mechanic said the A-10 could be a main player in any Air Force action over Afghanistan. His co-workers understand that, said Mr. Burger, a former Air Force crew chief in the early 1980s. People are not rushing their work at the expense of quality, he said. "We want to put out the best product we can to support our pilots."

As the A-10 crews go about their work, Mr. Pat Murphy walks the floor of the huge hangar. A production line supervisor, he overseas the work in progress. He is proud of the new Air Force emblem painted on the hangar floor and the sign with the pink pig that lets everyone know they are in Hog Heaven. Since the terrorist attacks, his co-workers are more dedicated to their jobs and morale is up, said Mr. Murphy, who was an Air Force crew chief in the 1970s. "The A-10 could be our primary weapon system in the upcoming war," he said. "And people seem to have taken that to heart. It has energized them." They realize they may need to compress or speed up their work schedule to get the aircraft back into service, he added.

Ms. Shauna Sullins installs a wire harness in an A-10 Thunderbolt II. She works in "Hog Heaven," the A-10 production section of the aircraft directorate at the Ogden Air Logistics Center at Hill. (Photo by Tech. Sgt. Lance Cheung).

In anticipation of mission

Ms. Sullins has mixed emotions about what could soon happen. Less than two years ago, she was in uniform and still has a strong sense of Air Force mission. Her husband, David, is an active-duty F-16 crew chief with the base's 388th Fighter Wing, and they have a 6-year-old son.

She expects her husband to deploy somewhere, soon. They have talked about it and she is ready for his departure. But it is what he is trained for and something she knows he must do. "Yeah, I'm scared, but he has my 100 percent support," she said. "And knowing we'll be OK here is what's going to get David — us — through a separation."

In the meantime, she does not want to speculate about what might happen. She just wants to continue to crank out A-10s at Hog Heaven. And help maintain the home front.

— Master Sgt. Louis Arana-Barradas, Air Force Print News

ESC provides deployable comm suite for troops

As Air Force units are deployed in support of Operation Enduring Freedom, the Electronic Systems Center's Theater Deployable Communications program office here, is busy providing the communications infrastructure those units will need for deployed operations.

The TDC program office provides deployed units with the communications equipment needed to carry out their mission such as computers, telephone switches, satellite terminals and radios.

Built for tough conditions

The communications equipment provided is specially designed to stand up to various conditions that might be encountered during a deployment such as temperature variations, protection from dust and moisture, as well as shock, vibration and pressure changes that are encountered onboard an aircraft.

"So far we've fielded equipment to 50 units and we're building equipment as we speak," said Ms. Joan Wandrei, TDC program office program manager.

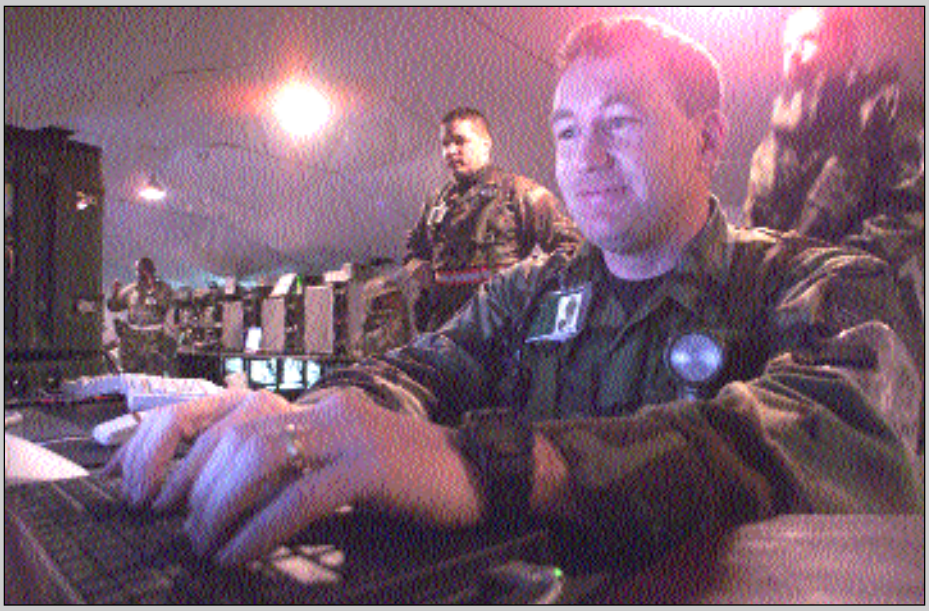
For this deployment, Air Force units from Air Mobility Command, U.S. Air Forces in Europe, Air Combat Command, Pacific Air Forces, Air Force Special Operations Command and the Air National Guard have been supplied with deployable communications equipment.

COTS technology

"We believe in our program and we're very pleased to be able to contribute," Ms. Wandrei said.

"We've been working very hard to ensure that the communications equipment we provide is working and if our deployed units need something we'll get it to them. The TDC program office acquires commercial-off-the-shelf, or COTS, communications technology for deployed units.

"Once the equipment is purchased, we go through a spiral process to keep the equipment upgraded. It's a constant process of technology insertion," Ms. Wandrei said.



Above, Master Sgt. Kenneth Reinhardt, 1st Communications Squadron theater deployable communications, or TDC, data team chief, updates network firewall information during a recent 1st Fighter Wing Operational Readiness Inspection at Langley AFB, Va. The ruggedized TDC system is already in the hands of Air Force units on the front lines and ESC is building additional units to meet demands as a result of Air Force communications support for Operation Enduring Freedom. Right, TDC equipment, like this ruggedized laptop provide a reliable communication infrastructure for deployed troops. (Photo by Staff Sgt. David McCarrison)

Roll off capability

"We need to be sure that our deployed information technology can be transported into a theater in such a way as to ensure operability when it rolls off the aircraft," Ms. Wandrei said.

The TDC Program Office first began fielding the deployable communications equipment in 1996.

The program office is expecting to continue fielding deployable communications equipment to more than 100 units through 2005.

Program goals

The TDC program office has four goals — the first is to decrease the airlift required for deployment.

The program office is acquiring equipment that is lighter and takes up less space than previous communications technology.

Increasing the capacity of the equipment that is fielded to units is the second goal.

"We ensure that units have enough equipment plus spares to keep things running during a deployment," Ms. Wandrei said.

The third goal is to increase the flexibility of the equipment provided to ensure the equipment best meets customers' needs, she said.

The fourth goal is that the equipment not require additional manpower to operate.

Supporting deployed troops

"Our intent is to provide the communications infrastructure for deployed units," Ms. Wandrei said.

"We build it and field it with our customers in mind."

— Ms. Rhonda Siciliano, Electronic Systems Center Public Affairs

OPSEC keeps puzzle pieces apart

Information bits added together provide adversary an upper hand

Loose lips sink ships — at least that's what they said during World War II. According to Maj. Dana Nelson, Air Force Materiel Command operations security manager, that philosophy still rings true today.

"In today's free-flowing, information-based society, there are many channels of information potential adversaries can easily access," Maj. Nelson said.

"Actively using the Internet and computer-based systems to transmit military defense information is a prime example," he said.

Technologies exploitable

Using the Internet, web sites, telephones and radios factor into AFMC's overall OPSEC posture, Maj. Nelson said. OPSEC awareness and continued training are keys to successfully protecting critical information and guarding against that information being exploited.

In operations security, each bit of information is a puzzle piece. When alone, some information might seem unimportant. But, when matched with other information, the entire picture can be completed.

According to Master Sgt. David Walker, Air Force OPSEC program manager at the Pentagon, when someone violates OPSEC rules, the military mission could be compromised, resulting in lost lives and equipment.

He said the enemy could analyze small bits of unclassified information from telephone conversations, e-mails and small talk and use them to examine the planning, preparation, execution and post execution phases of any activity. This allows them to see the big picture of military action in any operational environment.

"The picture with bits and pieces of information added together provides the adversary an upper hand," he said. "The enemy now has the information necessary to thwart our planned military operations."

> **"In operations security, each bit of information is a puzzle piece. When alone, some information might seem unimportant. But, when matched with other information, the entire picture can be completed."**
>
> **— Maj. Dana Nelson**
> **AFMC OPSEC Manager**

OPSEC vital to AFMC mission

OPSEC identifies information and observable actions relating to mission capabilities, limitations and intentions in order to prevent exploitation by potential adversaries. So, Sgt. Walker said it's everyone's duty, whether active duty, family member or civilian, to protect the mission.

Some things people should not talk about outside the proper environment include troop movements and locations, equipment locations, operational status of equipment, mission taskings and leadership movement.

Because AFMC is in the acquisition, test, evaluation and sustainment business, developing and fielding new weapons systems and technologies, OPSEC is equally important in this command as it is anywhere else.

OPSEC for processes, products

"It's vitally important that OPSEC is applied to both our processes and products, from concept exploration to system deployment and retirement," Maj. Nelson said. "OPSEC practices within AFMC afford our nation the ability to maintain the technological edge over the adversary. In doing so, this command is able to equip and support the world's finest Air Force…one that will continue to ensure the United States' superpower status."

Because cellular phones are very vulnerable to interception, Sgt. Walker said it is important for people to use secure phones to protect sensitive information. These phones encrypt and decrypt phone conversations that cannot be descrambled without the proper code. Sgt. Walker said they provide the military a high degree of information protection.

Sgt. Walker said it is also important to remember that the need to know takes precedence over a person's security clearance.

"Even if a person has the proper security clearance, the information may be privy to a small group of people who are responsible for protecting the information," he said. "Before granting access to classified material, a person must have the proper security clearance and a need to know."

Maj. Nelson agrees.

"Whether the Air Force is protecting critical information on flight routes, bombing run times in enemy territory, or testing prototype weapons system capabilities, the adversary, despite differing in presentation and connection, remains the same throughout."

He said AFMC has the world's finest people who use or develop cutting edge technology. They leverage that technology to create premier weapon systems to make what's already there for the warfighter even better.

Practice good OPSEC

"Nobody wants our adversary to be better, stronger or faster than we are," he said. "Practicing good OPSEC, not only within AFMC, but also throughout the Air Force, will keep that from happening. Without OPSEC, we will lose more than just the technological edge."

For more information on OPSEC, contact local OPSEC program offices. Each office maintains location-specific critical information lists of information requiring OPSEC protection.

— Staff Sgt. Amy Parr, Air Force Print News and Tech. Sgt. Carl Norman, AFMC Public Affairs, contributed to this report.

AFRL warrior support

Labs lead tech discoveries

The Air Force Research Laboratory is leading the discovery, development and integration of affordable warfighting technologies for our aerospace forces.

The laboratory, which is made up of 10 directorates spread out at locations around the United States, constantly identifies, assesses and reassesses ongoing research to ensure steady investments continue in critical technologies, according to lab officials.

New technologies

"One of our most basic responsibilities is to build a legacy for the future as rich in technology as we inherited from our predecessors," said Maj. Gen. Paul Nielsen, commander, Air Force Research Laboratory. "Our investments in technology today gives us options and solutions for the future with technology transfer applications for civilian applications as well."

AFRL, with their more than 5,000 employees and $1.4 billion budget, ensures that happens.

The lab pushes the envelope in such diverse areas as air vehicles and satellites; aero, rocket and space propulsion; conventional munitions and directed energy; sensors and information; exotic materials; and training and protecting Air Force people.

AFRL focuses on long-term technologies that could radically change the Air Force of tomorrow, while investing in near-term technologies that meet immediate and high-priority needs.

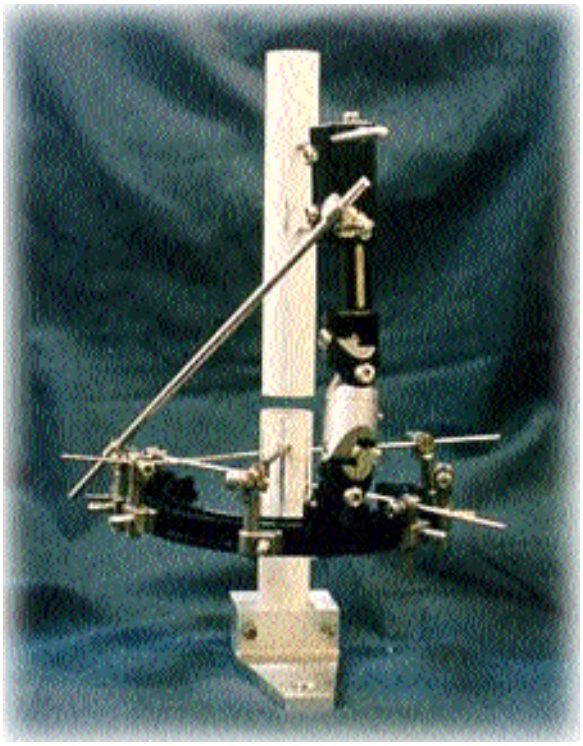
"We understand that our technology may be needed on non-conventional battlefields; the enemy may not always be readily identifiable," said Gen. Nielsen.

Some examples of AFRL unleashing this power of innovative technology:

External fixator

AFRL's Materials and Manufacturing Directorate Materials Test and Evaluation team recently completed tests on a device that stabilizes and orients broken bones. The directorate worked with Wright State University's School of Medicine and the Department of Orthopedics at Miami Valley Hospital in Dayton, Ohio, who designed and tested the device.

Originally intended to improve the care of soldiers injured in battle, this technology easily transfers to the public. Any fracture caused by high-speed projectile may result in bone fragments that are either lost or cannot be pieced together. This makes realignment of bones extremely difficult. In these extreme cases, using casts, plates or screws can prove to be inadequate.



The military has long dealt with permanent damage to bone structures of wounded soldiers. The external fixator will greatly aid the setting of messy bone fractures, and in some cases, prolong life. (Courtesy photo)

Directorate scientists and engineers provided in-house laboratory support to the WSU School of Medicine, evaluating variations of a device developed to separate and precisely orient the bones.

The external fixator orients the fractured bones to heal in their original shape. The bones grow best with repeated and controlled axial loading with the avoidance of any side-to-side sliding at the fracture, which can keep the bones from unifying. The ideal external fixator allows limited axial flexing but not side-to-side shearing motion or rotational torsion.

Vein viewer

Other scientists at the materials and manufacturing directorate made a medical breakthrough in the technology used for viewing veins. The invention has the potential for a variety of applications. Vein viewer was sparked by an inquiry from the Walter Reed Army Institute of Research. Medical personnel said the most pressing need was intravenous, or IV, needles for a wounded soldier on the battlefield.

Vital to stabilizing a patient, promptly inserting an IV is often impossible under low light conditions. Some estimate that of the ten thousand soldiers who bled to death in Vietnam from wounds to their extremities, 20 percent could have been saved with more timely IVs.

AFRL's invention uses night vision goggles equipped with special filters to see infrared light that passes through the skin but is partially blocked by the blood in the veins, in any or no lighting. The view becomes possible through absorption of infrared light by the deoxygenated hemoglobin traveling in veins.

The name "vein viewer" is somewhat of a misnomer. Bone, muscle, arteries and other tissue are also viewable. Observing these parts has opened the door to a tremendous number of uses for the vein viewer, thus making the technology valuable to many medical fields. Doctors, for instance, can now study the movements of tendons, which are viewable with the innovation.

Experiments verify a needle inserted beneath the skin is also visible, since metal blocks infrared light. Consequently, doctors hope to detect other metal objects under the skin, such as bullets or shrapnel.

Experts agree that countless civilian applications are possible, be it emergency medical services, trauma centers, burn

centers, blood banks or different surgical procedures.

Interactive data wall

The interactive data wall, another AFRL technology, recently rose in importance. The data wall is a high tech solution to the information management problems facing the 21st century military commander. The advanced displays and intelligent interfaces technology team of AFRL's Information Directorate in Rome, New York, developed the technology.

The data wall combines commercial technology and specialized hardware and software. With three horizontally tiled video projectors the data wall revolutionizes strategic planning. The system features speaker-independent voice activation and a wireless pointing device using camera tracked laser pointers. It provides both conventional computer mouse functionality and electronic grease pencil capability to interact with a high-resolution display Examples of data display elements include detailed terrain, land route maps, real-time audio/video information, archived geographic database information and modeling and simulation capabilities.

Field deployable and portable versions of the interactive data wall were developed so users can disassemble, transport and reassemble the technology quickly. Future research plans for the interactive data wall will focus on the ability to support multiple users simultaneously. Multiple-user speech input is being investigated, as is the ability to track multiple pointers. Research is also continuing to increase the screen size of the portable versions.

For many years, various branches of the military extensively utilized night vision goggle, technology. Despite the widespread use of goggles, a common problem occurred — they only provided an instantaneous 40-degree field of view.

A field survey conducted in the early 1990's sought to improve goggle technology by highlighting improvement areas with the number one desire being an increased field of view. A small business innovative research effort, initiated by AFRL in 1995, delivered the concept of a "panoramic night vision goggle." Two versions evolved, the goggle I, which included a cueing and symbology overlay for fighters and emphasized protecting pilots while ejecting; and the goggle II, which utilized a "straight through" optical design attached to a standard mount like current goggles. The Air Force used ideas from both of these innovations in taking the next step in design.

Panoramic NVGs

The human effectiveness directorate at Wright-Patterson AFB, Ohio, currently works with the night vision and electronic sensor's directorate at Ft. Belvoir, Va. on a joint initiative, producing a wide field of view "integrated panoramic night vision goggle". The integrated initiative takes pilot feedback, human performance limitations and field evaluations into account when developing the technology.

For example, a popular innovation involved with the integrated initiative enables the user to wear prescription and laser protection eyewear.

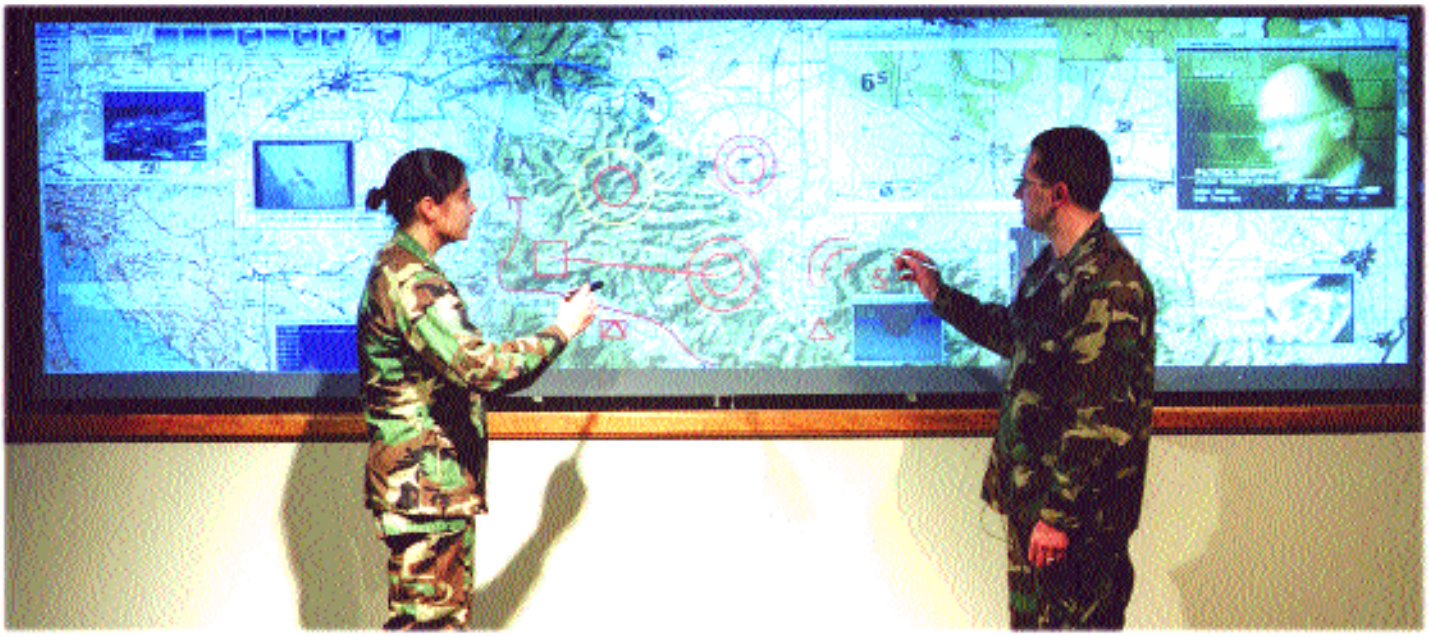
The initiative utilizes maintenance friendly designs, including the modular component feature, which will allow for quick, solder free repairs. The initiative uses ergonomic focusing knobs allowing for easy adjustment in addition to being rubber coated protecting the aircraft canopies from scratching. For the future, the integrated initiative will incorporate symbology overlay and video display insertion from on-board and off-board sources. Also, technologists hope the addition of a miniature camera to record the image from one of the inboard channels will help in post-flight mission debriefing.

Ready for the warfighter

These are just a few of the myriad discoveries AFRL brings forward in its wide array of sciences, answering a wide range of demands, ensuring support is ready before the warfighter calls.

Its research emphasizes foresight, seeking out potential problems and finding answers. In short, the laboratory anticipates future warfighter needs and provides rapid answers to warfighter calls for immediate support and high priority needs.

— AFRL Public Affairs



First Lt. Marjorie Quant , a program manager in AFRL's Information Directorate, and Capt. Mark Brykowytch, developmental engineer in the Aeronautical Systems Center's F-16 program office, test out the interactive data wall, a high resolution, large screen visualization tool that provides for dynamic planning and execution capabilities. (U.S. Air Force photo)

Brooks AFB support of WTC recovery efforts a 'techno-thriller'

Hollywood couldn't have written a better script for what a Brooks Air Force Base, Texas worker went through to deliver experimental probes, designed for finding people buried alive, to the New York site known as ground-zero.

Not only did Maj. Al Gracia prevail in his Don Quixote-like quest on behalf of the Air Force to help save lives, but the adventure in which he was the protagonist also underscored his commitment to helping his family deal with the tragedy.

As scientists scanned the rubble at what was New York's World Trade Center using prototype devices that can detect a victim's heartbeat through 30 feet of debris, the 311th Human Systems Program Office acquisition officer could take solace in knowing he played a major role that may have led to finding one of his wife's relatives.

Family ties

"Two of my wife Carol's cousins are married to New York City firemen. They had gone to the World Trade Center following the attack. One of them is still missing. My participation let my family know the Air Force was doing everything it could to help. It provided some hope to my family," Maj. Gracia said.

Maj. Gracia's race against time began quite ironically the day before the attack. On Sept. 10 at the Pentagon, the Office of the Undersecretary of the Air Force for Acquisition received a funding proposal for a patented gizmo called a remote casualty location assessment device. The proposal by its inventors at Lawrence-Livermore National Laboratories was submitted by the 311th System Program Office to develop it further for Air Force use. Air Force Materiel Command headquarters had received the same proposal Sept. 7.

The Air Force is interested in the device, Maj. Gracia noted, because of its unique capabilities that include detecting certain vital signs of unresponsive casualties trapped under rubble.

Employing unique capabilities

The day after the terrorist attacks, Maj. Gracia received an urgent telephone call from AFMC headquarters. "The AFMC director of requirements asked how many of the prototypes were available. I told him we had two prototypes ready to go, plus personnel to operate them," Maj. Gracia recalls. He said they were interested in deploying the devices to New York to assist rescue workers to find people buried in the debris.

The first hurdle for our team was finding air transportation for the Lawrence-Livermore scientists in the wake of the federal ban of all aircraft flights nationwide. The chief scientist for the project was stranded in North Carolina. His colleagues, and the remaining equipment, were in California.

"Command officials told me to tell my guys to be ready. Cell phone service was spotty by then. I tried to arrange air transportation within 24 hours of contacting our scientists.

"I contacted the National Guard Bureau," Maj. Gracia said, explaining that he knew Air Guard squadrons were flying missions supporting the recovery effort. "It was serendipitous that I found a Puerto Rican National Guard C-23 that stopped for refueling at Raleigh-Durham Airport. They were transporting rescue equipment to New York required to support 25 search dogs." Maj. Gracia also knew the remote assessment device's chief scientist, who had one of the prototypes with him, had earlier headed to the closest airport, which just happened to be the Raleigh-Durham Airport.

Getting on board

Maj. Gracia arranged for the scientist to get on the plane, but he only had 40 minutes to do so. Meanwhile, the scientist, who was stopped in a long line of cars at an airport checkpoint, was unaware that Maj. Gracia arranged transportation for him. With Maj. Gracia's family continually praying for him, he prevailed against great odds. "I told airport security guards to look for a man in a rented silver Impala. They found him and provided a police escort to the other side of the airport where the pilot of the C-23 had turned off the engines to conserve fuel."

The pilot told Maj. Gracia, "I have room for one guy and 100 pounds," which elicited the major's reply, "Okay, I have one guy and 70 pounds of baggage." The scientist, worried about abandoning his rental car during heightened security, was again helped by Maj. Gracia who arranged with security police valet service. "I told the scientist to forgive me for not providing him with a meal," Maj. Gracia joked.

Maj. Gracia, however, was not out of the woods yet. He had to arrange transportation for the scientist when he arrived at Stewart Air National Guard base in Newburgh, N.Y. Meanwhile, Maj. Gracia also had to arrange transportation for the California scientists. He had to persuade officials with the Federal Emergency Management Agency to arrange air transportation for them at a time when everything was shut down for security reasons. His urgent pleas resulted in the Department of Energy

Secretary providing his personal aircraft to transport the California scientists.

Getting all of them there was, in itself, a major achievement. Getting them past site security was nearly impossible because some people, posing as rescue workers using false identification, tried to breach security.

"These nine scientists were not dressed like rescue workers and had devices unknown to anyone in the search and rescue community," Maj. Gracia related. He also had to convince the state and city the equipment these scientists had would be of enormous value to rescue operations.

Maj. Gracia cut through the proverbial red tape with the help of many key people.

On Sept. 15, Maj. Gracia's wife and kids were listening in amazement as he talked to the scientists at ground-zero. He could hear the sound of machinery in the background. His family could also hear him breathe a sigh of relief for overcoming seemingly impossible obstacles that they believe was achieved through God's help.

— Mr. Rudy Purificato, 311th HSW

Title image: A New York City fireman calls for 10 more workers to make their way into the rubble of the World Trade Center, Sept. 15, 2001. The RCLAD was used at ground-zero can detect a victims heart beat in 30 feet of debris. (Photo by Journalist 1st Class Preston Keres)

Casualty location device used at World Trade Center

A prototype device that can detect through 30 feet of rubble the slightest motion within the human heart was used during recovery operations at New York's World Trade Center thanks to the visionary work of 311th Human Systems Program Office staff who had been evaluating it for Air Force use.

"The remote casualty location assessment device, or RCLAD, was originally developed by the University of California's Lawrence-Livermore National Laboratories for the Department of Energy," said Maj. Al Gracia, 311th SPO's chief of the warfighter requirements, commercial products and new technologies branch.

Equipment validation

Through Maj. Gracia's effort, three location assessment devices were dispatched to New York a few days following the terrorist attack. While these experimental probes did not find any victims alive, field testing during actual rescue operations validated their value for potential military application.

Maj. Gracia said program office technology scouts discovered the casulty location assessment devices last summer during a visit to Lawrence-Livermore National Laboratories. "We often send our personnel to scout for the best technologies that can help us meet our human systems requirements," Maj. Gracia said.

While it was originally developed to support laser technology, the assessment device piqued Air Force interest because it met two human systems needs. "First, it can detect motion, such as heartbeats and respiration using multiple radar frequencies that are not affected by concrete, wood and most debris material," Maj. Gracia said. He explained its effectiveness in quickly finding people alive is crucial. Historically, 99 percent of people who are rescued are found within 48 hours.

Maj. Gracia cited several past U.S. military operations in which such a device would have been invaluable in finding victims alive.

Secondly, this device meets the military requirement of assessing the condition of combat casualties to determine whether to expose rescue personnel to hostile fire. "Historically, we've lost 20-30 percent of medics who were killed trying to rescue people who were already dead. By using this device, we can assess a casualty's vital signs before exposing others to danger," explains Maj. Gracia.

Lawrence-Livermore scientists developed the remote casualty location assessment device in 1993 for use as a high-speed oscilloscope needed to capture data generated by their 100 trillion-watt nova laser. "Scientists found the circuits developed for it could form the basis for a sensitive receiver for a low-powered, extremely small radar system," Maj. Gracia noted.

Unconventional technology

The assessment device does not operate using conventional technology. It uses a patented fundamentally different type of technology called micropower impulse radar. The micropower impulse radar differs from conventional radar's continuous wave emissions by using very short electromagnetic pulses to detect minute motion at much shorter ranges.

"The device is unaffected by external noise, and unlike search dogs, is not affected by high levels of dust and smoke," Maj. Gracia said, noting it's also superior to fiber optic cameras in that it can scan any area. He noted that the technology in the location assessment device is similar to that found in studfinders used to locate wall studs through sheetrock. Powered by a 9-volt battery, the device currently is capable of detecting one person at a time. Future development includes detection of multiple victims.

Under review

The funding proposal development for Defense Department applications is currently being reviewed at the Pentagon and at Air Force Materiel Command headquarters. "We have requested $2.5 million through the Warfare Rapid Acquisition Process Program to take this 15-pound device from the prototype stage to a durable, ruggedized device of less than two pounds," Maj. Gracia said.

Eventually, each device will cost about $100 and will be initially used in search and rescue operations.

— Mr. Rudy Purifacto, 311th HSW

The remote casualty location assessment device developed by Lawrence-Livermore scientists and tested by the 311th HSW at Brooks was used at ground-zero in New York to search for victims of the Sept. 11 terrorist attack.

AFMC supports rescue and recovery efforts

From deployments to donations, the men and women of Air Force Materiel Command responded to the attacks on Sept. 11 in a variety of ways.

Mobile medics

Within hours, six expeditionary medical support teams from the 74th Medical Group, Wright-Patterson Air Force Base, Ohio were formed and deployed to McGuire AFB, N.J. They supplemented the setup of an Air Force theater hospital and pre-positioned to support rescue and recovery at the Pentagon and the World Trade Center. They prepared to send up to three portable hospitals to ground-zero if necessary.

"Although we didn't get to contribute at the site of the disasters, this experience was an excellent rehearsal for what we need to do when we deploy again. Each time we deploy, we improve our operations," said Dr. (Col.) Steve Chambers, medical services flight commander.

The medical center has more than 800 people on mobility status and two staffed Air Force theater hospitals that can be used anywhere in the world.

Lifesaving deliveries

Members of the Massachusetts Civil Air Patrol, a volunteer auxiliary of the Air Force, quickly answered the call for blood and medical supplies. They were able to fly when commercial flights were grounded. Blood, syringes and other medical supplies were airlifted from Hanscom AFB, Mass., to JFK Airport in New York. They also worked to deliver hi-tech medical instruments, replacement parts for thermal imaging cameras and communications support.

While duty led some volunteers away from Hanscom, others, such as reserve Master Sgt. Gary Mozuch, were called to the base. Sgt. Mozuch, a K9 handler with the Massachusetts state police, was working to secure Boston's Logan International Airport after the attacks, when he was called to report for security forces duty and to help secure the base. Sgt. Mozuch said that serving the Air Force was not a duty, but an honor, and he will serve as long as he is needed.

Staff Sgts. Chris Charpentier and Jodi Rogers sort stuffed animals donated by fellow members of the 654th Combat Logistics Support Squadron. (Photo by Ms. Margo Wright)

Behind the scenes support

At Hill AFB, Utah, members of the 75th Transportation Squadron Combat Readiness Flight helped Task Force One, a Salt Lake County-based urban search and rescue team. The squadron palletized and loaded the team's equipment. "The logistical support we've received from Hill has been incredible," said Mr. Scott Freitag, media relations officer for the Salt Lake County Fire Department.

Giving from the heart

AFMC personnel who were not directly involved in the rescue and recovery efforts found other ways to help.

The men and women at Tinker AFB, Okla., are one example.

Members of the 654th Combat Logistics Support Squadron and the 72nd Communications Squadron collected stuffed toys to be given to children in New York and Washington D.C.

"We weren't involved directly, but we're all Americans," said Staff Sgt. Cuney McLean, who works in the education technology center. "We want the people in New York and Washington, D.C., to know they're in our thoughts and prayers and that we're thinking of them."

Many others from Tinker AFB joined with the Heartland Rescue Care Team, created during the Oklahoma City bombing rescue effort, to provide relief for rescue workers. Volunteers picked up donations from various drop points, gathered cardboard boxes and loaded the supplies into trucks.

"This was a huge team effort," said Mr. Steve Littleton, quality assurance team lead, airborne accessories directorate. "When the rescue workers were in Oklahoma City following the bombing of the Alfred P. Murrah building in 1995 and the tornado of May 1998, Heartland provided food, shelter, supplies and whatever the search and rescue teams needed. Heartland Rescue's mission statement is 'We rescue the rescuers and we have responded to the rescuers' needs again."

— Compiled by Ms. Crystal Reed, AFMC Public Affairs

Civilian volunteers step in, help SF guards

The higher levels of security following the Sept. 11th terrorist attacks put a strain on security forces. Some Air Force Materiel Command civilians stepped in to lend a hand.

At Arnold Air Force Base, Tenn., security forces went into immediate action after the attacks on America, but they weren't alone in the task of protecting the base. They had help from a number of regular support contractor employees who are members of the augmenter force. Security police force augmenters are actually a contract requirement for the mission support contractor at the Arnold Engineering Development Center, or AEDC.

All-volunteer force

Augmenters aren't drafted into service; they are all volunteers who are trained in specific duties for certain "need" situations, not only in emergencies.

After volunteering for service, augmenters are trained for specific duties in what contractor security chief Mr. Dave Gardenhire refers to as "special" duties. These duties can range from supporting special events to providing security for sensitive AEDC resources. They are also trained in specific areas that include weapons safety and use of force, job specifics and contingency operations.

"Most police departments have an auxiliary or reserve force. That's what this is like. We've used them more this year than normal," said Mr. Gardenhire. Augmenters do not have arrest powers, where the AEDC security force does.

"They perform duties that we don't normally require," said Mr. Gardenhire."They're there when you need them."

During the higher state of security, augmenters worked 12-hour shifts, 7 days a week to support security.

"If you're not used to working 12-hour shifts, especially the midnight shift, it takes a toll on your body," said Mr. Gardenhire. "It is a challenge physically and requires both personal and family sacrifices.

Enthusiasm reigns

Arnold wasn't the only base to look to its civilian work force during this time of increased security.

An enthusiastic corps of about 40 people — most of them volunteers — recently became what may be the first Air Force civilians to augment security forces at Robins AFB Ga., gates.

The civilians were the 78th Security Force Squadron's answer to a perplexing problem — getting 15,000 to 20,000 people through the gates from 5 to 10 a.m. and conducting a 100 percent identity check of each driver and passengers.

"One exceptional aspect of this plan is that it gives the civilian sector an appreciation for what security forces do, day in and day out to get the work force on the installation," Lt. Col. Al Jamerson, commander of the 78th SFS said. "Using civilian volunteers also has cemented the military-civilian partnership, giving them a real sense of playing a personal and important role in our operations. Now more than ever before, people are coming to the realization that force protection is everyone's responsibility, not just security forces."

Civilian personnel issued the call for manpower via email on Friday (Sept. 14), and most of the volunteers were on the job the following Monday at 3:30 a.m. They received instruction on what to look for on identification cards and how to handle emergency situations. Then they boarded a bus that took them to their gateposts, where they worked beside military members who remained close by to handle any problems.

Special request

Ms. JoAnn Hutchison, who processed the special manpower request in civilian personnel, said the product directorates were asked for support based on their work force numbers. The job duties were described as assisting security forces in checking identification cards, visually inspecting vehicles and helping with traffic flow.

"This is something civilians can do besides giving blood," she said. "I gave the civilian who checked my identification card an 'attaboy'."

Ms. Kim Harrison, technology and industrial support directorate member, and former aircraft hydraulics mechanic in the Air Force, said she volunteered out of a sense of duty.

"I felt the security forces were doing this a long time and working long hours. We have a large civilian population, and I think we ought to help."

— Compiled by Ms. Crystal Reed, AFMC Public Affairs

Mr. Michael Middleton, a civilian employee at Robins, who normally works in the avionics management directorate, assisted 78th Security Forces members with the 100 percent identity check following the terrorist attacks. (Photo by Ms. Sue Sapp)

Institutionalizing force protection

Don't forget and let complacency return you to 'business as usual'

Thirteen thousand casualties occurred in the first battle. The world's center of business and commerce reduced to dust. The home of the world's largest military power was ablaze.

Is everybody paying attention? Good. These events were not written by a science fiction novelist as we are so unfortunately aware, they occurred Sept. 11, 2001.

They are real and were conducted by a ruthless enemy that we should fear and respect. Do we fully understand what needs to take place in our own force protection world?

The answer to the preceding two rhetorical questions and several that follow can only be given by you, they are all designed to get you thinking about force protection, how to plan it and how to successfully execute it.

Business as usual?

Have you returned to "business as usual?" Soon, if it hasn't already happened, complacency will return. Our leadership has told us to get back to our lives, which is necessary to overcome the fear and terror. But…we shouldn't forget that we've been proven to be vulnerable. Unless we institutionalize force protection, we will soon forget why we couldn't park next to the building, why we had to show our IDs every time we entered the base and every time we went into our buildings. We will forget how loudly we complained to the base commander because the restaurant in our building ran out of sesame seed bagels, and we'll reminisce about the unbearable one or two hour wait at the base gate.

We'll get back to "business as usual." Yet, thousands of people became innocent victims, and the threat remains unchanged. The individuals who perpetrated those acts show the same unfaltering resolve and determination for their cause. Do we have the resolve and determination to protect our forces?

Recent events should solidify in everyone's mind that our current system of force protection needs attention, your attention. While not broken, our force protection policies are not perfect. They are based on advanced intelligence warnings that must be taken seriously. And, they are not designed for easy implementation over long periods of time. At least not a long period of time where we conduct "business as usual."

In virtually every operational readiness inspection the requested list of simulations is dominated by force protection measures. This indicates several things. First, "business as usual" must take a back seat to force protection if we are to be prepared.

In recent years, we haven't truly done that. Secondly, we have to start believing our own intelligence indicators and the validity of the potential threats. In many cases we have made the threats fit the plan rather than building a plan to counter the threat.

Finally, we have to redefine "business as usual." The events of Sept. 11, and other recent terrorist incidents, were not bad dreams. They really happened. The very real potential of another terrorist attack should be part of "business as usual," meaning we had better be prepared to prevent, react and counter the threat. The only way we can do that is to practice and exercise our force protection measures.

FORCE PROTECTION CONDITIONS

Force protection conditions, or FPCON, are used to describe progessive levels of terrorist threats to U.S. military facilities and personnel.

The selection of the appropriate response to terrorist threats is the responsibility of the commander having jurisdiction or control over the threatened facilities or personnel.

What's the answer? None of us knows for sure, but it's clearly obvious that business as usual won't cut it. What was normal no longer is. You can start by institutionalizing the way you protect yourself. Think about your every action as it relates to an enemy that doesn't fear you or death. Make force protection your first thought each and every day. Force protection should have become a daily job and a "household" phrase in the Air Force by now.

It's not just a "cop thing"

Remember Khobar Towers, the initial attack on the World Trade Center, the embassy bombings, the USS Cole attack? How many kicks in the face does it take to get our attention?

Security minded pundits have been trying to convince the world that the notion of force protection is not just a security or law enforcement function. We have coined a nifty slogan that "force protection is everyone's business," yet all the posters depict our security forces in a force protection role. Force pro-

tection is not known as everyone's business in practice. It is still a "cop thing" as far as most people are concerned. Remember this the next time someone says that the security forces are on the front line of force protection…the first to die in this war were people like you, me, our neighbors and our children…not the security forces.

A time for self-examination

Why do things like this occur? Because the freedom we enjoy daily makes us vulnerable. One would think that in the wake of the most severe terrorist attack in world history, Americans would reexamine how they live their lives day-to-day. It's not happening and it won't as long as our security takes a back seat to everyone's comfort and convenience. What's required is to change how we think, work, operate and live. At our home, base and work place, we must conform to the sad and grim reality that the next attack will be out of the blue and it could happen to us. All of us, not just our security forces, must learn to operate at increased force protection levels everyday.

Now you're thinking, "We can't operate at such a high level of security forever, it'll cost us billions of dollars and millions of man hours." The costs will be high, but it's better than the alternative. Whose life should we risk for a dollar or two, for convenience and comfort? Mine? Not a chance! Yours?

What can you do? Think force protection. Exercise force protection. Live force protection. Support your leadership's decisions that inconvenience you and your neighbors. Seek every opportunity to practice force protection in your everyday life.

We are staffed, equipped and trained for the peacetime environment in our own backyard, the need for change should be obvious. And there are still more of you who say, "it'll never happen here." You're mistaken if that thought has occurred to you.

Institutionalize force protection

How many of you would have believed such a large-scale attack on an American city was conceivable prior to Sept. 11? How many of you could not believe your own eyes after watching the second aircraft hit the World Trade Center? The unthinkable has again become reality. Was it enough? Was it enough to convince you of the danger to all of us if we do not institutionalize force protection?

— Information provided by members of HQ AFMC Inspector General Directorate

Security forces are trained and prepared to use deadly force to protect Air Force people and installations, but everyone should understand and act on established force protection measures, according to AFMC Inspector General officials. They caution against returning to "business as usual." (Photo by Senior Airman Michele Misiano)

Information assurance, or IA, and awareness have always been the responsibility of each Air Force Materiel Command member. In the aftermath of the horrific terrorist attacks of Sept. 11, IA will be more critical than ever before. At all levels we need to promote sound IA practices and improve individual awareness by addressing the security issues that affect access to information.

Trusted information critical

Technological innovations have revolutionized the way we work and communicate. Trusted information is critical to everyone and the maintenance and defense of our communications infrastructure and computer systems remains vital to the mission.

Individual awareness remains key to protecting information. There are a multitude of vulnerabilities associated with the use of computers particularly when considering the public Internet and electronic mail. Every individual should be familiar with the risks and the appropriate safeguards.

In response to recent terrorist attacks and America's response in Operation Enduring Freedom, the AFMC Network Operations and Security Center, has spun up its operations to sustain a heightened operational awareness of our networks.

To guarantee the highest levels of information assurance, the operations and security center provides oversight of all AFMC networks and ensures these networks maintain the highest level of availability and capability. To do that, the AFMC center maintains a cross flow of information with all base network control centers. The goal is to ensure the operational community is aware of the nature and status of potential threats to the communication systems supporting their operational needs.

Secure network first line of defense

Securing the network provides the first line of defense in protecting mission critical resources. It's characterized in terms of logical and physical components. Logical components are the standards and guidelines used to create a security policy to provide a defensive perimeter around each base network infrastructure. Physical components are devices like firewalls and proxy servers, which enforce the security policy.

Another key area of the security plan is network monitoring. The source and nature of any computer-based threat is constantly changing. Therefore, proactive and reactive steps are included as part of the overall plan. One of the proactive programs used is Internet scanner, which provides automated security vulnerability detection and analysis for all devices in the network.

With this tool, the AFMC operations and security center performs risk prediction to understand the current state of the network in terms of potential security failures. It also provides risk qualification to determine which failures will cause the most harm. Armed with this information, the security center can identify potential risks and prescribe the actions necessary to eliminate that risk.

Reactive tools function in response to actual real-world threats. The automated security incident monitor performs real-time monitoring such as attempted intrusions, attempted system admin access or other events with the potential to cause damage.

When an intrusion or other event is detected, it will be categorized and an appropriate response taken. Responses range from notification to base personnel requesting local investigation, to forcing the immediate blocking of all traffic from the source of the threat.

Emergency Response Team

Other information assurance assistance comes from the Air Force Computer Emergency Response Team. The team provides information protection assistance to the entire Air Force. It conducts its own operations involving intrusion detection, incident response, computer security information assistance and vulnerability assessment. It also has responsibilities to provide decision support and guidance on policies and procedures to the Air Staff, Defense Information Systems Agency and Air Force Office of Special Investigations.

The emergency response team will send notification to the security center about newly discovered threats and vulnerabilities and issue a time compliance network order, ordering specific actions in response to a contingency. During the recent episodes with the "Code Red" and "Nimda" viruses, emergency response team was quick to evaluate and test the corrective actions and send the information to all Air Force wide organizations.

A second source of information is the office of special investigations. Since 1999 the office of special investigations and AFMC have engaged in a mutually beneficial collaboration for defensive counter information and information assurance efforts. The goal of this partnership is to prevent intrusions and identify potential threats.

Threat-based analysis

It provides threat-based analysis enhancing network security countermeasures by identifying information at risk and identifying previously undetected exploitation methods. Their efforts are focused specifically on AFMC locations.

The AFMC center is working diligently to meet any threat to information security. Information assurance is everyone's responsibility and it's up to everyone in the command to practice sound information protection and preach information awareness.

— Maj. Robert Gawinske, AFMC/SCOL, IMA – USAFR

Remember those who are vigilant

— Mr. Ron Fry
AFMC Office of Public Affairs

6:45 a.m.: I get in the car and leave my house ready to take my place in the long traffic backup resulting from stepped up security measures at the base gate.

7:00: I reach the rear of the traffic line, about two miles from the gate, and begin inching my way forward.

7:15: I've moved about 20 feet. I tune my car radio to catch the latest news about the terrorist attacks.

7:23: My car has eeked forward about another 10 feet.

7:45: There must be a problem up ahead. Haven't budged an inch in the past 20 minutes.

7:48: The line's moving again, but it's very slow. I tune in Rush Limbaugh to catch his morning commentary.

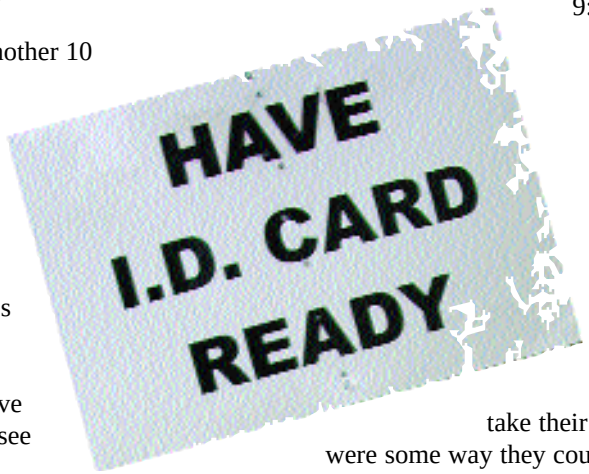
8: I tune back to catch the news headlines at the top of the hour. It's the same news I heard at 7:15.

8:12: This is starting to get frustrating. I've been in line for over an hour and still can't see the security checkpoint.

8:20: The lady in the car ahead of me insists on placing her car's gear in the "park" position every time she stops. It's driving me crazy and I'm tempted to get out of my car and go tell her to stop it. Guess I better not, don't want to scare her.

8:36: This is really getting old. Just listened to another segment of the news. Nothing new. Still can't see the checkpoint.

8:37: I tune to the oldies FM station to get my mind off the news.



8:43: I've memorized the license plate number and car dealer sticker on the car in front of me. The lady is still putting it in park at every stop.

8:46: Just rounded a bend in the road and I think I see the I.D. checkpoint. Just looked at my gas gauge. Should have filled up "before" getting in line.

8:50: This is ridiculous. When I get to my office, I'm gonna call and complain to somebody. The woman in front of me still doesn't get it!

9:01: I finally reach the young airman checking I.D.s. She offers a pleasant "good morning" and "have a nice day" as she checks my I.D. and waves me through. I grouse and move on.

9:02: It hits me like a ton of bricks! Yes, this is an inconvenience. Yes, it takes a long time to get on base. But it's a small, small sacrifice to make.

The victims of the Sept. 11 terrorist attacks would gladly take their place in our traffic jams if there were some way they could magically rejoin us. To complain about our minor inconveniences is to insult the memory of those who died in New York, Pennsylvania and at the Pentagon. And it insults the dedication of the security forces who guard our bases.

So, the next time you pass through a security checkpoint or pass the person checking I.D.s at the door to your workplace, don't complain. Remember the victims and be glad we have people who are ever-vigilant in protecting us from the evil that changed all our lives on Sept. 11.

What shall we say to these things?

— Lt. Col. Joel Rayfield
Office of the Command Chaplin

The AFMC Chaplain Service extends its deepest sympathy to all who have lost loved ones during the events of Sept. 11, 2001. During this time of pain and sorrow, what can we say to these things? There are no easy answers and we cannot provide a tidy solution to the many mysteries of life. God is God, and since we are man and woman, we will never understand all things. The one thing we can be assured of is that nothing will separate us from the love of God. However, the questions are still present and most of them begin with "Why?"

It is important to acknowledge the questions and understand that these are normal questions. The heroes of scripture have asked them. Many of our Psalms are laments and reflect the cry for understanding in the midst of pain and suffering. Job asked the question "why" over and over again. Does it reflect a lack of faith to say we do not know why this happened? No! God understands our limitations. We feel as if we should move on with life and yet we find it difficult.

What can we do?

First, we can respond as people of faith by praying for the victims, their families and the response teams. Many of us have been doing this. We should include President Bush and our military and civilian leaders in our prayers. We should also pray that God's love would be seen even in this tragic event. God's love has already been seen in the firemen and others who continued to respond even in the face of deadly danger. What greater love can be shown than for someone to give his life for another! Pray for emotional and spiritual healing for those rescuers who have seen so much. Pray for our children. And yes, do not forget to pray for your personal, individual needs.

President Bush has called upon us to pray for our nation as well as the victims, their families and the heroic men and women who have responded to this terrible loss of life and property. Our first president, President George Washington, in June of 1779, while camped on the Hudson River, voiced the following prayer for our nation which is so appropriate to our days:

"And now, Almighty Father, if it is Thy holy will that we shall obtain a place and name among the nations of the earth, grant that we may be enabled to show our gratitude for Thy goodness by our endeavors to fear and obey Thee. Bless us with Thy wisdom in our counsels, success in battle and let all our victories be tempered with humanity. Endow, also, our enemies with enlightened minds, that they become sensible of their injustice and willing to restore our liberty and peace. Grant the petition of Thy servant, for the sake of Him whom Thou hast called Thy beloved Son; nevertheless, not my will, but Thine be done."

We, as a people of faith, can continue that practice of prayer for one another and our nation.

Words of comfort

Second, we can respond as people of faith by turning to the comforting words of scripture. Psalm 23 is one of the best know psalms. The words, "Even though I walk through the valley of the shadow of death, I will fear no evil, for you are with me; your rod and your staff they comfort me" (Psalm 23:4) remind us that we will go through this valley. They also remind us that we will not have to go through this alone. God is with us. God's love will comfort us. Other comforting words from scriptures affirm this promise:

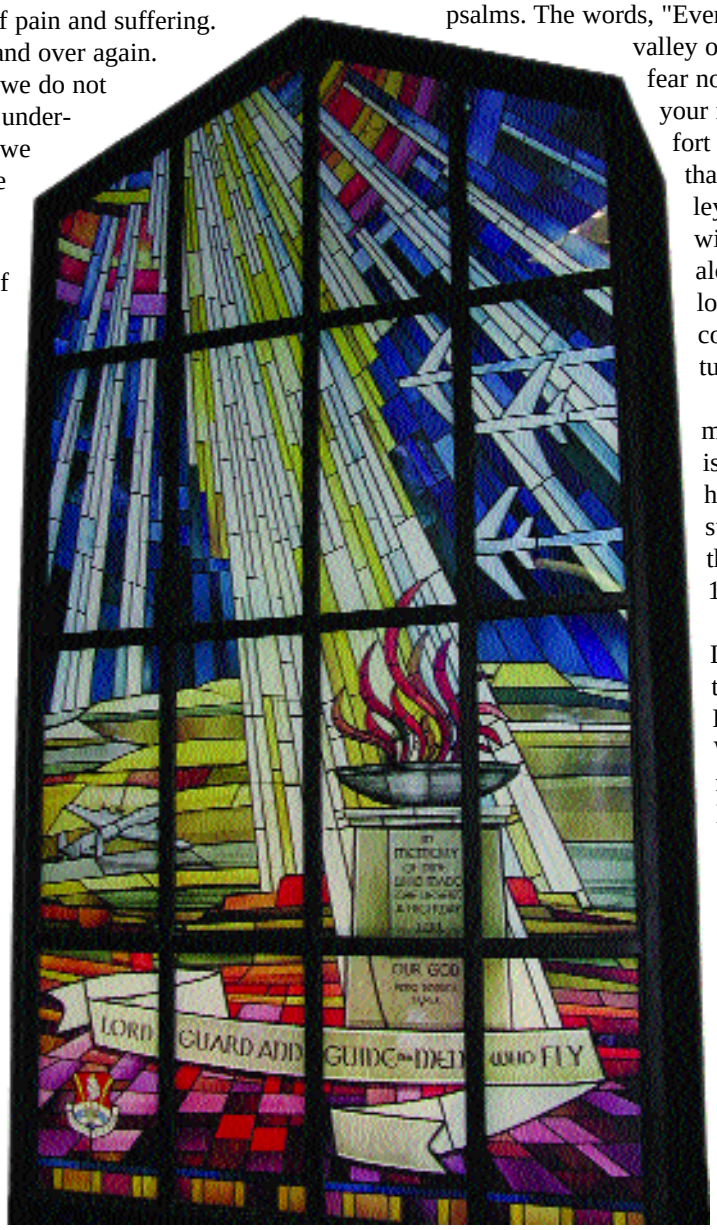
Qur'an: "Nay, whoever submits his whole self to God and is a doer of good — he will get his reward with his Lord; on such shall be no fear, nor shall they grieve. Chapter 2, Verse 112

Hebrew Scripture: "The Lord is my light and my salvation; Whom shall I fear? The Lord is the defense of my life; Whom shall I dread? ... Wait for the Lord; Be strong, and let your heart take courage; Yes, wait for the Lord." Psalm 27

New Testament: "Peace I give you, my peace I give unto you: not as the world giveth, give I unto you. Let not your heart be troubled, neither let it be afraid." John 14:27

Gather together

Third, we can respond as people of faith by gathering together in our places of worship. As we worship, we also fellowship with each



This window stands inside the chaplain service office at AFMC headquarters at Wright-Patterson Air Force Base, Ohio. (Photo by Ms. Estella Holmes, AFMC Public Affairs)

other. This is a great opportunity to give encouragement and to be encouraged. When we gather to worship, we soon realize that our questions are the same questions others are asking. Go into the house of the Lord and worship Him. As we worship and pray together, we discover a new source of strength to help face these difficult times. Also, you will find a source of peace expressed by the Psalmist: "Surely goodness and love will follow me all the days of my life, and I will dwell in the house of the Lord forever." Psalm 23:6

We do not have the answers to all of our questions. As I made a hospital visit to a dear friend who was dying of cancer, he asked, "Do you know who stopped by to visit me today?" I answered, "Yes, your wife was planning to visit you today." "No," he said, "God stopped by to visit me today and He told me everything would be OK."

He didn't mean he would be healed, but he was assured God would be with him as he walked through this valley. God would provide comfort.

We too, can have that same assurance of God's presence in our time of need. As a people of faith, God visits with us through prayer, scripture and worship, affirming that He will provide for us, individually and as a nation.

This assurance is simply, yet eloquently, expressed in a prayer cherished by a young soldier in World War II during the Battle of the Buldge: "I know that where I am is God; and since this is so, I know that there is no place safer than where I go. Amen."

That is what we shall say to these things! That is the message of faith! With God there is no safer place!

All faiths can unite against terror

— Gen. Lester Lyles
Commander
Air Force Materiel Command

The unthinkable happened Sept. 11 — a tragedy of such huge proportion that it cannot be fully understood. Air Force Materiel Command people, like the rest of our nation, asked why.

We may never know the full extent of what motivated such acts of terrorism, but we do know the United States became the victim of the ultimate hate crime that day.

Even as an African-American youth who came of age during the Civil Rights Movement and the tumultuous Sixties in our nation's capitol, I have no reference point for hate acted out on such a massive, deadly scale.

Like most of you, I cannot really grasp hatred so deep and so vicious as we Americans now have experienced.

Since the Sept. 11 attack, we have seen an increase in harassment, slurs, and intimidation because of how people dress, how they look and the religion they might practice.

The Air Force has a policy of zero tolerance for discriminatory treatment in any form, including against individuals of Arab-American, Middle Eastern, or Muslim descent.

Service members who violate this policy are subject to action under the Uniform Code of Military Justice, and civilian employees are subject to administrative and disciplinary actions.

Commanders have been urged at all levels to remain vigilant and take prompt, appropriate action with members of their commands who fail to meet these Air Force standards.

However, what I really want, and most hope, is that all of us will speak against discrimination, harassment and any other manifestation of this kind of hate that is so fundamentally in opposition to American ideals.

Choose to be the kind of people for which this republic stands: **"ONE NATION, UNDER GOD, WITH LIBERTY AND JUSTICE FOR ALL."**

Mosques, like The Grand Mosque in Bahrain, Saudi Arabia, above are an outward symbol of the Islamic faith. Hate crimes are reportedly on the rise across America in the wake of terrorist attacks in New York and Washington on Sept. 11. Individuals should immediately report all incidents relating to hate crimes, discrimination or harassment to local military equal opportunity offices. (Photo by Photographer's Mate 3rd Class John L. Beeman.)

How to fly the flag

In the past several weeks, the American flag has been proudly flown in cities, towns, schools, parks and homes, perhaps more than ever before.

Even though Americans are displaying the flag as a symbol of freedom, many people are not showing proper respect to the Stars and Stripes.

Military servicemembers render honors as fire and rescue workers unfurl a huge American flag over the side of the Pentagon during rescue and recovery efforts following the Sept. 11, terrorist attack. (Photo by Photographers Mate 1st Class Michael Pendergrass)

Here are some general rules on handling and displaying the flag.

• The National colors should be raised and lowered by hand. Don't raise the flag while it's furled. Unfurl, then hoist quickly to the top of the staff. Lower it slowly and with dignity.

• It's the universal custom to display the flag only from sunrise to sunset on buildings and stationary flag-staff in the open. However, when a patriotic effect is desired, the flag may be displayed 24 hours a day if properly illuminated in darkness.

• The flag should not be displayed during inclement weather, except when an all-weather flag is used.

• Every precaution should be taken to prevent the flag from becoming soiled. It shouldn't be allowed to touch the ground or floor, or to brush against objects.

• When carried, the flag should always be aloft and free — never flat or horizontal.

• The flag should not be dipped to any person or thing, with one exception: Navy vessels, upon receiving a salute of this type from a vessel registered by a nation formally recognized by the United States, must return the courtesy.

• When displayed from a staff in a church or public auditorium, the flag should hold the position of highest prominence, in front of the audience, and at the clergyman's or speaker's right as he faces the audience, with other flags at his left.

• The flag should never be displayed upside down except as a signal of dire distress.

• Do not use the flag as a portion of a costume or athletic uniform.

• No objects should be placed on or over the flag.

• Never use the flag as drapery or to cover a speaker's platform.

• When the flag is used in unveiling a statue or monument, it shouldn't serve as a covering of the object to be unveiled. If it's displayed on such occasions, do not allow the flag to fall to the ground, but let it be carried aloft to form a feature of the ceremony.

• Do not use the flag as a receptacle for receiving, holding, carrying or delivering anything. Never place upon or attach any mark, insignia, letter, work, figure, design, picture or drawing of any nature to the flag.

• No other flag may be flown above the Stars and Stripes, except the United Nations flag at the U.N. Headquarters, and the church pennant, a dark blue cross on a white background, during church services conducted by chaplains at sea.

• When the American flag becomes tattered and torn or too soiled to clean, it should be destroyed by burning.

— Air Force News Service

(Photo by Mr. David Housch)

Arnold paints new look

ARNOLD AIR FORCE BASE, Tenn. — A maintenance worker places tape around the edges of the new Air Force insignia painted on the floor outside of AEDC's Mark 1 Space Chamber.

Mark 1 is one of many of the facilities on Arnold which is undergoing renovation and beautification.

— Information provided by AEDC Public Affairs

New F-22 Raptor detachment activates

EDWARDS AIR FORCE BASE, Calif. — The Air Force Operational Test and Evaluation Center activated a new detachment in early October, responsible for planning, executing and reporting to the Defense Department on the F-22 operational test program scheduled to begin in April 2003.

Detachment 6 will build on the combined developmental and operational test foundation the F-22 Combined Test Force established. According to Col. Ricardo Cazessus, Detachment 6 commander, the need for locating the detachment at Edwards grew out of the advanced fighter directorate at AFOTEC headquarters, which had responsibility for overseeing the F-22 program for the center.

— Information provided by AFFTC Public Affairs

Enterprise Data Warehouse cuts ribbon

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Rep. Dave Hobson and Gen. Lester Lyles, commander, Air Force Materiel Command, were on hand recently to electronically cut the ribboon on AFMC's new enterprise data warehouse.

The data warehouse provides a single source for analytical and historical information to enhance Air Force combat support decision making. It significantly enhances the Air Force's ability to improve areas such as asset visibility, weapon system management, reach-back supply operations, contingency planning and combat operations.

Within the Air Force, the enterprise data warehouse will establish an open, flexible, shared data environment for the combat support community and open lines of communication with the operations community. Types of data included are maintenance, supply, transportation, finance, logistics plans and contracting.

AFMC's Materiel Systems Group awarded NCR Corp of Dayton, Ohio, the contractor for initial development of the new system. The award period was from August 2000 through September 2001. A second increment is a 36-month task-order awarded to KPMG, of Mclean, Va., which began in August.

The program goal is to move toward a single, cross-enterprise warehouse of information for Air Force people to access and make smart business decisions that support the warfighter.

— Information provided by AFMC Public Affairs

Research building named for Maj. Gen. Davis

KIRTLAND AIR FORCE BASE, N.M. — An Air Force officer, who served at Kirtland Air Force Base, N.M., in the 1970s, 80s and 90s, advancing in grade to major general, was honored recently with the dedication of a Kirtland research facility in his name.

Maj. Gen. Richard Davis, who died while on active duty in February 2001, was memorialized during a ceremony at the Air Force Research Laboratory's Directed Energy Directorate.

The building, officially opened in June 2000, is an $8.4 million, 29,000-square-foot research facility. Scientists are using the facility to do state-of-the-art research and development in chemical, electrical and hybrid lasers that can be used in air-, ground- and space-based systems.

Among the dignitaries who attended were Gen. Lester Lyles, commander Air Force Materiel Command, and Maj. Gen. Paul Nielsen, commander Air Force Research Laboratory.

Gen. Davis began his Air Force career at Kirtland and returned for two individual tours. The last time, he served as commander of Phillips Laboratory, which became part of AFRL in 1997.

The newly-named "Richard W. Davis Advanced Laser Facility" is a two-story structure with offices and laboratories designed so that interior configurations could be rearranged to fit the needs of new experiments. Two laboratories are devoted to chemical laser work, such as the chemical oxygen-iodine laser that was developed by directorate scientists. That laser is being used for the airborne laser, a laser-carrying jumbo jet that can destroy ballistic missiles soon after launch.

— Information provided by AFRL Directed Energy Public Affairs

NATO AWACS aircraft deploy to U. S. base

TINKER AIR FORCE BASE, Okla. — The North Atlantic Treaty Organization, or NATO, recently began deploying five of its Airborne Warning and Control Systems, or AWACS, aircraft from Europe to the United States. While deployed here, the aircraft will be based at Tinker, and will operate with the North American Aerospace Defense Command, or NORAD, in support of Operation Noble Eagle the aircraft will help defend the United.States in the aftermath of the terrorist attacks Sept. 11.

The United States asked NATO to deploy the AWACS aircraft to assist in the NORAD mission, to allow other aircraft of this type to deploy elsewhere and to lower the operational tempo of this high-demand aircraft.

The deployment grows out of a decision to provide a NATO presence and demonstrate resolve among the alliance.

— Information provided by OC-ALC Public Affairs

SMC moves to AFSPC

The Space and Missile Systems Center became part of Air Force Space Command in a command realignment ceremony in October at Fort MacArthur, a military housing community for Los Angeles Air Force Base, Calif.

Realigning SMC under AFSPC consolidates space development, acquisition and operations functions in one organization under one commander — creating a strong center of advocacy for space systems and resources, according to Gen. Lester Lyles, commander, Air Force Materiel Command.

"This realignment will better meet operational requirements for space. Space priorities will be set by a single command, Air Force Space Command, ensuring the Air Force continues to provide quality stewardship for America's space assets. AFMC will still provide acquisition and science and technology support to AFSPC after SMC has been realigned," said Lyles.

Creating a powerhouse

"We are officially part of Air Force Space Command," said Lt. Gen. Brian Arnold, SMC commander. "This is very exciting. What a wonderful opportunity the space commission has provided us in bringing these two great organizations together, Air Force Space Command and SMC."

This comprehensive planning effort by AFSPC and AFMC is one element of the Air Force's overall implementation of recommendations made by the Commission to Assess United States National Security Space Management and Organization — the Space Commission.

Chartered by Congress, the commission provided recommendations to improve oversight, management and acquisition of U.S. military space systems and capabilities.

The Defense Department reviewed the commission's report and agreed with its conclusions.

The Secretary of Defense then directed the Air Force to take a number of actions to implement the commission's recommendations. "We are creating an organization that has no counterpart anywhere. A cradle-to-grave powerhouse that's exactly the right organization for the 21st century," said Lt. Gen. Roger DeKok, AFSPC vice commander.

Smooth transition

The SMC realignment does not change the status or importance of Los Angeles AFB. Command officials expect no change in SMC's current mission of developing, acquiring and sustaining America's quality space systems.

There will be very limited physical movement of people and organizations. Functional experts from AFSPC, AFMC and SMC have been working closely together on the transition to ensure the realignment is accomplished as smoothly as possible.

As the process of reengineering military space organization and management begins, uninterrupted delivery, operation and sustainment of space-based capabilities to the joint warfighter will continue in support of national security.

— *SMC Public Affairs*

Air Force Materiel Command commander, Gen. Lester Lyles, left, passes the Space and Missile Systems colors to Lt. Gen. Roger DeKok, Air Force Space Command vice commander, in a ceremony that transferred control of SMC from AFMC to AFSPC. (Photo by Mr. Joe Juarez)

Spirit of New York flies at Edwards

When members of the global power bomber combined test force resumed flight testing here Sept. 13 following terrorist attacks on the United States, the spirit of New York was with them, literally. The first test mission after the attacks involved the B-2 Spirit aircraft christened the 'Spirit of New York.'

Symbolic flight

This flight symbolized the resolve of the Air Force to continue testing America's bombers and ensures the aircraft are ready when needed, according to Lt. Col. Arnie Bunch, global power bomber CTF director.

"The CTF takes great pride in testing 'The Spirit of New York' in light of past events," Col. Bunch said. "We hope the great people of New York can find some measure of comfort and assurance in the fact that the military remembers those lost in this attack. The sacrifice of the many innocent New Yorkers sits heavily on our hearts. We are proud to carry the 'Spirit of New York' name on our aircraft."

'The Spirit of New York' B-2 has been instrumental in all phases of the test programs, including low observable, avionics and weapons tests, according to Col. Bunch. "This aircraft has tested everything the bomber can and will do in combat."

Working together

The global power bomber CTF is a team of military members, government civilian employees and defense contractors working together to ensure America's bomber force is ready to answer the call to arms if needed by the national command authorities.

The B-2 Spirit is a multi-role bomber capable of delivering both conventional and nuclear munitions. A dramatic leap forward in technology, the bomber represents a major milestone in the U.S. bomber modernization program. The B-2 brings massive firepower, in a short time, anywhere on the globe through previously impenetrable defenses.

The majority of the Air Force's B-2 bombers are assigned to the 509th Bomb Wing, Whiteman AFB, Mo.

— *Ms. Leigh Anne Bierstine, AFFTC Public Affairs*

'God Bless the USA'

Lee Greenwood performs concert honoring Robin's 60th anniversary

It began simply as a celebration of the 60th anniversary of Robins Air Force Base, Ga., but it ended as so much more. The concert ended as a celebration of the American spirit.

Mr. Lee Greenwood, author of what he has termed the patriotic song of his generation, turned his lyrics into the patriotic theme of the beginning of the 21st century.

The estimated crowd of 15,000 began to flow into the museum gates at about 5:45 p.m. Sept. 26. Waving flags and wearing red, white and blue, the people carried an aura of patriotism about them.

Even before the music began, enthusiastic fans like Ms. Lori Rose talked about "that song."

Song evokes aura

"I want to hear Mr. Greenwood sing that song," she said. "It's been an emotional two weeks. I would have come anyway, but it makes it a little stronger."

By 6:35 p.m. the Air Force Reserve Bagpipe Band began to play as a mother pointed toward the street and said "see that big beautiful flag," as she saw the garrison flag suspended above the crowd.

Representing Robins, Maj. Gen. Dennis Haines, Warner Robins Air Logistics Center commander, thanked the large crowd for coming out to help the base celebrate its 60th anniversary and to stand up in the fight against terrorism.

"Our hearts are heavy from the events that occurred Sept. 11 in New York, Washington and Pennsylvania," he said. "But, I say to you our will will not be broken."

Georgia Rep. Saxby Chambliss also addressed the crowd with words of support.

"What another great day for America … Robins AFB has been at the point of the spear for the last 60 years and it will be in this," he said.

Anticipation of the song

After remarks, the Reserve band jazz ensemble's easy tunes relaxed and prepared the crowd for the featured entertainer.

"I came out to enjoy the concert and to celebrate the 60th anniversary of Robins," said Mr. Arthur Hilton.

As the bagpipes played a soul-stirring rendition of Amazing Grace many listeners wiped tears from their eyes and remembered Sept. 11.

Mr. Charles Bell, 83, has seen a lot of America's history. A World War II veteran, he served in Iran with the 3392nd Quartermaster Corps as a company dispatcher.

"I never thought this could happen here. I'm saddened by it. I know this is not over," he said of the tragic events in early September.

He said the concert and other patriotic events happening across the nation are wonderful.

"We've been brought together and now seem to be brothers in arms. This is going to have a lasting effect on our nation," said Mr. Bell.

Mr. Greenwood performed for nearly an hour, mixing new songs from his latest CD and contemporary tunes before the greatly anticipated "God Bless the USA."

Then, at last it was time for "the song." Thunderous applause erupted as flags waved and the crowd chanted "USA, USA." Mr. Greenwood had done what he intended. In a press conference earlier in the day he said when he wrote the song in 1983 it represented healing for America and raised the level of pride for those who may not have felt pride.

Increased American pride

"I wanted to do something to make the country more cohesive," he said. "I've done something with this song that I never knew I would do.

"The power of the song is bigger than I am. It's about everyone who sacrifices and calls himself or herself an American," said Mr. Greenwood.

— Ms. Lanorris Askew, WR-ALC Public Affairs

Lee Greenwood sings "God Bless the USA" as the Robin's AFB audience stands waving American flags at the open-air concert at the Museum of Aviation at Sept. 26. (Photo by Ms. Sue Sapp)

Tinker man touched by kindness of strangers

During a moment of national crisis, Mr. Dan Schill and his wife, Barbara, were touched by the generosity of fellow Americans. On the morning of Sept. 11, they were enroute to Seattle to visit Dan's mother, his brother and family.

The Southwest Airlines flight landed in Kansas City at 8 a.m. where the Schills expected to take a connecting flight to Seattle. It didn't happen.

Grounded

Shortly after the Schills received their boarding passes for the connecting flight, they learned a jet had struck a tower at the World Trade Center in New York City.

"Shortly after that, it was on the monitor about the planes being delayed," said Mr. Schill, historian at Oklahoma City Air Logistics Center. "At that time, the Pentagon hadn't been hit. In fact, the second tower hadn't been hit."

The airline informed passengers that all flights would be delayed until about noon. A second announcement by the airline informed passengers that all flights had been cancelled until at least 11 a.m. Sept. 12.

"Everybody was scrambling, seeking solutions to their travel dilemmas," Mr. Schill said. "I called my brother and told him I didn't know when we'd be coming, but it wouldn't be today; there's a delay."

The Schills decided to rent a car and drive back to Oklahoma, but none were available.

"I called home to our children to see if they could come pick us up, but they didn't answer," Mr. Schill explained. "We left messages. My wife called her uncle in Topeka, Kan., but he was not at home."

The Schills befriended a fellow traveler, Ms. Jamie Keen, who was also from the Oklahoma City area. She offered them a ride back to Oklahoma City after phoning her husband, who planned to drive to Kansas City to bring her home.

While they waited for the woman's husband to arrive, which was about eight hours later, all passengers were instructed to remove their luggage from the baggage claim area. The Schills searched two claim areas, but their luggage was nowhere in sight.

"There was an immense amount of baggage because they were emptying all planes," Mr. Schill said. "One employee asked for our claim tickets and he told us about the delay in unloading because of an unexpected diverted flight."

Mr. Dan Schill, a historian in the OC-ALC history office, saw first hand both the confusion and the kindness in the nation's airports following the terrorist attacks. He and his wife were forced to rely on the help of strangers while stranded after their flight was cancelled. (Courtesy photo)

The Schills' plane had been moved from the gate to allow the diverted flight to deplane. Meanwhile, the luggage on the Schills' flight remained on their plane.

"When it came in, we got our bags," he said. "Nobody seemed to get panicked, nobody was mad. People were scrambling trying to call hotels on their cell phones, but none were available near the airport."

Generous strangers

Schill said the Salvation Army later came to the airport to offer a place to stay for 200 people.

"People were coming by with signs to let us know they had room in their car and offered rides to wherever they were going," Mr. Schill said. "Nobody was going toward Oklahoma City though."

One woman drove to the airport and asked if anyone needed a place to stay. She told them she was from Kansas City and did not want anyone to be stranded at the airport.

"There were a lot of acts of kindness like that," Mr. Schill said. "The Red Cross came out with food for people who were stranded."

Ms. Keen's husband, accompanied by her father, arrived at the Kansas City airport around 6 p.m.

Mr. Schill called his son and asked him to pick them up a nearby restaurant. "We didn't want them [Ms. Keen and her husband] to have to drive to Norman," Mr. Schill said.

They only had to wait for about three minutes before their son arrived.

The employees at the restaurant were helpful to travelers stranded from cancelled flights at Oklahoma City's Will Rogers World Airport.

"They were giving discounts and they asked us if we needed anything to drink," he said. "People all over were very friendly, polite and helpful."

Home sweet home

The Schills arrived home around 1:30 a.m. Sept. 12. After an exhausting day, the Schills were glad to be home in their own bed. Mr. Schill did not return to work until Sept. 13.

"I didn't even plan to go to work on Wednesday," he said. "I was scheduled off until the next week and was too tired to work. Once we got back here, there was not much sense in not working. It's just a two-man office here."

The long, exhausting day was made more pleasant by the kindness and generosity of his fellow Americans, Mr. Schill said.

"For a bad situation, it went pretty well."

— Mr. Ray Dozier, OC-ALC Public Affairs

Gen. Lyles honors "Youth of the Year" at Kirtland

KIRTLAND AIR FORCE BASE, N.M. — Gen. Lester Lyles, commander of Air Force Materiel Command, recently presented Miss Aya Wadleigh with a commemorative coin after being named Air Force Materiel Command youth of the year

Miss Wadleigh's father, Staff Sgt. Kenneth Wadleigh, of the Air Force Research Laboratory's Directed Energy Directorate, was also on hand for the ceremony.

Miss Wadleigh, a 15-year-old high school sophomore, represented the Kirtland Boys and Girls Club, which was also selected as the best youth center of the year for AFMC. The general made the presentation during a recent visit to Kirtland.

— Information provided by AFRL Public Affairs

Researchers earn top U.S. Air Force science awards

KIRTLAND AIR FORCE BASE, N.M. — Researchers at the Air Force Research Laboratory's Directed Energy Directorate here were recently named recipients of prestigious Air Force honors for scientific accomplishments.

Dr. Jane Lehr will receive the U.S. Basic Research Award while the raven small telescope team and high-power microwave source antenna team will receive Air Force Science and Engineering Awards in separate categories.

Dr. Lehr, a senior scientist in the high-power microwave division, will be honored for her pioneering practical and theoretical work in ultrafast switching and compact pulsed power. Within two years, her research with pulsed power and electromagnetics surpassed the achievements of the previous 15 years. Her award honors the scientific efforts and achievements in basic research and recognizes individuals who made an outstanding and significant contribution in basic research.

The raven team of Mr. Paul Kervin, Capt. Robin Orth and Tech. Sgt. David Covey designed a low-cost operational telescope system from readily available commercial, astronomical components at the space surveillance system branch, Maui, Hawaii. They will receive the award in the engineering achievement category.

The high-power microwave source antenna team of Dr. Kyle Hendricks, Dr. Michael Haworth and Dr. John Luginsland will receive the award in the exploratory or advanced technology development category. The team successfully mated a billion-watt class, high-power microwave antenna with a compact pulsed power system that lead to a better understanding of the physics and engineering issues of these compact systems.

The science and engineering award recognizes "working level" Air Force personnel for their outstanding contributions in research, development or engineering.

— Information provided by AFRL Public Affairs

Museum aviation volunteer soars to new heights

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Mr. John Rumpf, U.S. Air Force Museum volunteer, was recently honored as the Wright-Patt Volunteer of the Year.

A seventy-three year old Austrian native, Mr. Rumpf began at age 14 as an apprentice in Friedberg, Austria, assigned to fabricate railroad engine parts for the Germans during World War II.

Fifty-nine years later, he is a master tool and die maker, machinist, pattern maker and fabricator, contributing to the restoration of the Museum's SPAD XIII, P-61C "Black Widow," T-6 "Mosquito," and RB-47 "Stratojet."

In a limited three and a half years, Mr. Rumpf has donated more than 2,000 hours to museum restoration projects, while also receiving the Wright-Patt Angel Award in 1999 and co-receiving the U.S. Air Force Museum Volunteer of the Year Award in 1999.

The Wright Memorial Chapter of the Air Force Association recognizes outstanding active duty, civilian, Guard, Reserve and volunteer members of the Wright-Patt community with its annual awards program.

Nominees are evaluated on leadership, job performance, self-improvement and positive representation of the Air Force.

— Information provided by U.S.A.F. Museum Public Affairs

AFRL sergeant earns IDEA award for new software

ROME, N.Y. — Computer software developed by an Air Force Research Laboratory sergeant has reduced a labor-intensive inventory control process and earned a $4,536 award from the Air Force Innovative Development through Employee Awareness program, or IDEA.

Master Sgt. Mark Reichman, a maintenance superintendent in the information directorate's logistics office, devised the software solution for electronically comparing the automated materiel control system records with data contained in the standard base supply system.

The AFRL Rome Research Site has more than 5,250 accountable items in the standard base supply system, which is the standard used by most Air Force organizations. Due to the expanded definition of an accountable equipment item established by AFRL, Rome's automated materiel control system contains more than 7,000 items. Comparing printouts of the two databases manually took four people four months to accomplish, at an estimated annual cost of more than $41,000. Reconciling the accounts electronically has proven to take a single person one month to complete, with an estimated savings of more than $37,800 annually.

Sgt. Reichman's idea has been approved for implementation at Rome and has been forwarded to Air Force Materiel Command headquarters for review and possible implementation at other locations. Adopting the software method at the command's locations using the automated materiel control system would result in an estimated annual savings of nearly $650,000.

A native of Ohio, Sgt. Reichman is a 19-year Air Force veteran.

— Information provided by AFRL Public Affairs

Providing combat support to the warfighter

AIR FORCE MATERIEL COMMAND